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10/673,755	09/29/2003	Tushar Deepak Chandra	ARC920030059US1	1473
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EXAMINER PHAM, MICHAEL				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/673,755

Applicant(s)

CHANDRA ET AL.

Examiner

MICHAEL PHAM

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-18 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Detailed Action

Status of claims

1. Claims 1-7, 9-18, 20-22 are pending.
2. Claims 1-7, 9-18, 20-22 have been examined.

Claim Rejections - 35 USC § 101

3. Claims 1-7 and 9-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. In view of MPEP 2106.IV.B: Determine Whether the Claimed Invention Falls Within An Enumerated Statutory Category and based on Supreme Court precedent and recent Federal Circuit decisions, a 35 USC § 101 process must:

a) be tied to another statutory class (such as a particular apparatus) (*Diamond v. Diehr*, 450 U.S.175, 184 (1981); *Parker v. Flook*, 437 U.S. 584 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63,70 (1972); *Cochrane v. Deener*, 94 U.S. 780,787-88 (1876))

OR

b) transform underlying subject matter (such as an article or materials) to a different state or thing (*Gottschalk v. Benson*, 409 U.S. 63,71 (1972); and *In re Bilksi*, Appeal No. 2007-1130).

In view of the above reasons, Claims 1 and 9 failed to comply to the above 35 USC § 101 requirements a) or b), and therefore are directed to non-statutory subject matter. The term storage does not necessitate any form of hardware, and there are no articles or materials being transformed. Dependent Claims 2-7 and 9-11 are also rejected for failing to resolve the deficiencies of claim 1 and 9 respectively.

4. Claims 12-18 and 20-22 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

MPEP 2106:

The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 U.S.C. 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best functional descriptive material per se.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material". Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming nonfunctional descriptive material, i.e. abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer"

Claim 12 and 20 recite a storage area network. However, claim 12 and 20 fails to contain any computer hardware that is used to implement the storage area network so as to realize its functionality. While the claims provide that the servers are coupled to storage. The term storage does not necessitate any form of hardware. Thus, the body of claim 12 and 20 are merely an abstract idea and is being processed without any links to a practical result in the technology arts and without any computer hardware manipulation. Only if at least one of the claimed elements of the system is a physical part of a device can the system as claimed constitute part of a device or a combination of devices to be a machine within the meaning of 101. Dependent Claims 13-

18 and 21-22 are also rejected for failing to resolve the deficiencies of claim 12 and 20 respectively.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 6, 12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 20030126202 by Watt (hereafter Watt) further in view of U.S. Patent Application Publication 20030131078 by Scheer et al. (Scheer).

Claim 1:

Watt discloses the following claimed limitations:

“identifying at least one master storage image that is stored in the storage of the storage area network and that will be associated with a system user when a server is allocated to the system user;” [0046, the administrator can pick and choose from the installed software base to create a master server image. 0058, the repository manager can also install and manage instances of a SAN as well as on a server’s local attached storage. 0033, the terms user, entity, administrator, and the plural form of these terms may be used interchangeably throughout herein refer to those who would access, use, and/or benefit from the tool that the present invention provides for dynamic server allocation and provisioning. Accordingly, disclosing identifying at

least one master storage image (0046, master server image) that is stored in the storage of the storage area network (0058, repository manager can also install and manage instances of a SAN) and that will be associated with a system user (0046, administrator) when a server is allocated to the system user (0033, who would access, use, and/or benefit from ..dynamic server allocation and provisioning)]

“generating a plurality of replicas of each identified master storage image prior to at least one server being allocated to the system user; and” [0046, once defined, this server image can be rapidly replicated and configured using automated tools to build out images for an entire server pool. Accordingly, disclosing generating a plurality of replicas (rapidly replicated and configured) of each identified master storage image (server image) prior to at least one server being allocated to the system user (build out images for an entire server pool)]

“allocating a selected replica of the plurality of replicas of the master storage image to each server allocated to the system user.” [0094, provisioning n instances 306 of a server class 304 provides DSAP (dynamic server allocation and provisioning) system 102 with the capacity to run n servers of the specified class 304. 0033, the terms user, entity, administrator, and the plural form of these terms may be used interchangeably throughout herein refer to those who would access, use, and/or benefit from the tool that the present invention provides for dynamic server allocation and provisioning. Accordingly, disclosing allocating a selected replica (0094, specified class) of the plurality of replicas (0094, server class) of the master storage image (0094, 306) to each server (0094, 304) allocated to the system user (0033, user)]

Watt's does not explicitly disclose "pre-configuring at least one identified master storage image with data and state information that is associated with a system user".

On the other hand, Scheer discloses "pre-configuring at least one identified master storage image with data and state information that is associated with a system user".

Scheer discloses 0012 lines 1-2, a user may submit a first network design 112 to the master configurer. 0018 lines 5-7, the master configurer may import from a database a generic digital image containing all for the necessary software to create a functional firewall server. 0019 lines 6-9, the master configurer dynamically builds digital images for each network component once the generic digital images are imported and pre-configured to be fully operational.

Accordingly, disclosing pre-configuring (0019, pre-configured) at least one identified master storage image (0019, digital image) with data (0018, software) and state information (0012, design) associated with a system user (0012, user).

Both Watt and Scheer are directed towards allocating and deploying servers, and are therefore within applicant's same field of endeavor. Watt discloses that an administrator can pick and choose from the installed software base to create a master server image. Once defined this server image can be rapidly replicated and configured using automated tools to build out images for an entire server pool. See Watt, 0046. Scheer more explicitly discloses pre-configuration of the image. It would have been obvious to a person of an ordinary skill in the art at the time the

invention was made to have applied Scheer to Watt for the purpose of pre-configuring a server with a digital image prior to deployment. Thus allowing the target server to be in an already to go state.

Claim 6:

The combination of Watt and Scheer additionally disclose in Watt “each replica is a logical volume.” (0067 discloses that the SAN routing and volume assignment can be changed by DSAP system 102 thereby affecting the SAN's mapping of the server's SAN connection to a SAN volume. The way the replica is referred to here makes it clear that the replicas are logical volumes.)

Claim 12:

Watt discloses the following claimed limitations:

“a plurality of servers coupled to a storage” [0046, repository manager is responsible for securely and efficiently provisioning and managing server images on storage devices within data centers. And figure 2 elements 212, 218, and 210. Accordingly, disclosing a plurality of servers coupled to a storage]; and

“a storage provisioning device coupled to the servers and allocating at least one server and a portion of the storage to a system user, the storage provisioning device identifying at least one master storage image that is stored in the storage and that will be associated with a system user when a server is allocated to the system user” [0094, provisioning n instances 306 of a server class 304 provides DSAP (dynamic server allocation and provisioning) system 102 with the capacity to run n servers of the specified class 304. 0046, the administrator and pick and choose from the installed software base to create a master server image. and 0058, in an

alternate embodiment, repository manager can also install and manage instances of a SAN as well as on a server's local attached storage. 0033, the terms user, entity, administrator, and the plural form of these terms may be used interchangeably throughout herein refer to those who would access, use, and/or benefit from the tool that the present invention provides for dynamic server allocation and provisioning. 0101, most parts of a server's system image are read only and identical from one server to the next. Accordingly, disclosing a storage provisioning device coupled to the servers and allocating at least one server and a portion of the storage to a system user (0094, DSAP), the storage provisioning device identifying at least one master storage image (0046, master server image) that is stored in the storage (0058, SAN) and that will be associated with a system user (0033, user).]

"the storage provisioning device further generating a plurality of replicas of each identified master storage image prior to at least one server being allocated to the system user" [0046, once defined, this server image can be rapidly replicated and configured using automated tools to build out images for an entire server pool. Accordingly, disclosing the storage provisioning device further generating a plurality of replicas (rapidly replicated and configured) of each identified master storage image (server image) prior to at least one server being allocated to the system user (build out images for an entire server pool)]; and

"allocating a selected replica of the plurality of replicas of the master storage image to each server allocated to the system user." [0094, provisioning n instances 306 of a server class 304 provides DSAP (dynamic server allocation and provisioning) system 102 with the capacity to run n servers of the specified class 304. 0033, the terms user, entity, administrator, and the plural form of these terms may be used interchangeably throughout herein refer to those who

would access, use, and/or benefit from the tool that the present invention provides for dynamic server allocation and provisioning. Accordingly, disclosing allocating a selected replica (0094, specified class) of the plurality of replicas (0094, server class) of the master storage image (0094, 306) to each server (0094, 304) allocated to the system user (0033, user)].

Watt does not explicitly disclose “at least one master storage image being pre-configured with data and state information that is associated with a system user”.

On the other hand, Scheer discloses “at least one master storage image being pre-configured with data and state information that is associated with a system user”.

Scheer discloses 0012 lines 1-2, a user may submit a first network design 112 to the master configurer. 0018 lines 5-7, the master configurer may import from a database a generic digital image containing all for the necessary software to create a functional firewall server. 0019 lines 6-9, the master configurer dynamically builds digital images for each network component once the generic digital images are imported and pre-configured to be fully operational.

Accordingly, disclosing at least one master storage image (0019, digital image) being pre-configured (0019, pre-configured) with data (0018, software) and state information (0012, design) that is associated with a system user (0012, user).

Both Watt and Scheer are directed towards allocating and deploying servers, and are therefore within applicant's same field of endeavor. Watt discloses that an administrator can pick and choose from the installed software base to create a master server image. Once defined this server image can be rapidly replicated and configured using automated tools to build out images for an entire server pool. See Watt, 0046. Scheer more explicitly discloses pre-configuration. It would have been obvious to a person of an ordinary skill in the Art at the time the invention was made to have applied Scheer to Watt for the purpose of pre-configuring a server with a digital image prior to deployment. Thus allowing the target server to be in an already to go state.

Claim 17:

Regarding claim 17, claim 17 is rejected under similar rational as claim 6.

7. Claims 2-5, 7, 13-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 20030126202 by Watt (hereafter Watt) further in view of U.S. Patent Application Publication 20030131078 by Scheer et al. (Scheer) and U.S. Patent 6816905 by Sheets et. al. (hereafter Sheets).

Claim 2:

Watt and Sheer do not explicitly disclose “de-allocating an allocated replica from the system user each time a server is de-allocated from the system user; and assigning the de-allocated replica to a pool of de-allocated replicas.”

However, Sheets discloses “de-allocating an allocated replica from the system user each time a server is de-allocated from the system user; and assigning the de-allocated replica to a

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pool of de-allocated replicas". (See column 18, lines 32-45, discloses, another way of looking at how the present invention can dynamically provide hosted service across disparate accounts is to view a portion of the servers as being assigned to a pool of a plurality of virtual servers that may be selectively configured to access software and data for a particular administrative group. Further disclosing it automatically allocates one of the servers from the pool of virtual servers to that administrative group. Conversely, if the dispatch module determines that an agency group can relinquish one of its servers, that relinquished server would be added to the pool of virtual servers that are available for re allocation to a different administrative group.)

It would have been obvious to one with ordinary skill in the art to combine the method as disclosed in the combination of Watt and Scheer with the de-allocating method as disclosed in Sheets et al. because Watt, Scheer, and Sheets disclose methods that operate very similarly, but the de-allocation was simply not explicitly addressed in the disclosures of Watt and Scheer, but is a natural extension of the combination. By moving the de-allocated replica into the pool, the server is now marked available for future use when it is needed. It is for this reason that one of ordinary skill in the art would have been motivated to include de-allocating an allocated replica from the system user each time a server is de-allocated from the system user; and assigning the de-allocated replica to a pool of de-allocated replicas.

Claim 3:

Watt and Scheer do not explicitly disclose "the pool of de-allocated replicas is configured to automatically scrub all replicas in the pool of de-allocated replicas asynchronously from de-allocation the step of de-allocation."

However, Sheets discloses “the pool of de-allocated replicas is configured to automatically scrub all replicas in the pool of de-allocated replicas asynchronously from de-allocation the step of de-allocation” (See column 15, lines 8-14, discloses one of the significant advantages of the present invention is that the process of reconfiguring servers from one administrative group to a second administrative group will wipe clean all of the state associated with a particular customer account for the first administrative group from the reallocated server before that server is brought into service as part of the second administrative group.)

It would have been obvious to one with ordinary skill in the art to combine the combination of Watt and Scheer with the automatic scrub function of Sheets because of the advantage automatically clearing the unique data provides. This provides a layer of security, allowing different users to use the same equipment dynamically without having to worry about improper sharing of secret data. It is for this reason that one of ordinary skill in the art would have been motivated to have the pool of de-allocated replicas configured to automatically scrub all replicas in the pool of de-allocated replicas asynchronously from de-allocation the step of de-allocation.

Claim 4:

Watt and Scheer do not explicitly disclose “the pool of de-allocated replicas is scrubbed when a number of de-allocated replicas assigned to the pool of de-allocated replicas equals a predetermined number.”

However, Sheets discloses “the pool of de-allocated replicas is scrubbed when a number of de-allocated replicas assigned to the pool of de-allocated replicas equals a predetermined

number.” [See column 15, lines 8-14, discloses that one of the significant advantages of the present invention is that the process of reconfiguring servers from one administrative group to a second administrative group will wipe clean all of the state associated with a particular customer account for the first administrative group from the reallocated server before that server is brought into service as part of the second administrative group.]

It would have been obvious to one with ordinary skill in the art to combine the combination of Watt and Scheer with the automatic scrub function of Sheets because of the advantage automatically clearing the unique data provides. This provides a layer of security, allowing different users to use the same equipment dynamically without having to worry about improper sharing of secret data. While not specifically mentioned here, the predetermined number can be considered to be one and the replica is scrubbed by reconfiguring it for use with another user's data. It is for this reason that one of ordinary skill in the art would have been motivated to have the pool of de-allocated replicas is scrubbed when a number of de-allocated replicas assigned to the pool of de-allocated replicas equals a predetermined number.

Claim 5:

Watt and Scheer do not explicitly disclose “the pool of de-allocated replicas is automatically scrubbed by reformatting.”

However, Sheets discloses “the pool of de-allocated replicas is automatically scrubbed by reformatting.” (See column 15, lines 8-14, discloses one of the significant advantages of the present invention is that the process of reconfiguring servers from one administrative group to a second administrative group will wipe clean all of the state associated with a particular customer

account for the first administrative group from the reallocated server before that server is brought into service as part of the second administrative group.)

It would have been obvious to one with ordinary skill in the art to combine the combination of Watt and Scheer with the automatic scrub by reformatting function of Sheets because of the advantage automatically clearing the unique data provides. This provides a layer of security, allowing different users to use the same equipment dynamically without having to worry about improper sharing of secret data. It is for this reason that one of ordinary skill in the art would have been motivated to have the pool of de-allocated replicas is automatically scrubbed by reformatting.

Claim 7:

Watt and Scheer do not explicitly disclose “the system user is one of a customer and an application”. However, Sheets discloses that the system user is one of a customer and an application. (See column 15, lines 8-14, discloses one of the significant advantages of the present invention is that the process of reconfiguring servers from one administrative group to a second administrative group will wipe clean all of the state associated with a particular customer account for the first administrative group from the reallocated server before that server is brought into service as part of the second administrative group.) It would have been obvious to one with ordinary skill in the art to combine the combination of Watt and Scheer with the automatic scrub by reformatting function of Sheets because of the advantage automatically clearing the unique data provides. This provides a layer of security, allowing different users to use the same equipment dynamically without having to worry about improper sharing of secret data. It is also clear that the user is referring to a customer in Sheets. It is for this reason that one of ordinary

skill in the art would have been motivated to have the system user is one of a customer and an application.

Claims 13-16 and 18

Regarding claims 13-16 and 18, these claims are rejected under similar rational as claims 2-5 and 7 respectively.

8. Claims 9 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 20030126202 by Watt (hereafter Watt) further in view of U.S. Patent Application Publication 20040172395 by Edelstein et. al. (hereafter Edelstein).

Claim 9:

Watts discloses the following claimed limitations:

“identifying at least one master storage image that is stored in the storage of the storage area network and that will be associated with a system user, each master storage image including both a read-only data portion and a data portion;” [0046, the administrator can pick and choose from the installed software base to create a master server image. 0058, the repository manager can also install and manage instances of a SAN as well as on a server’s local attached storage. 0033, the terms user, entity, administrator, and the plural form of these terms may be used interchangeably throughout herein refer to those who would access, use, and/or benefit from the tool that the present invention provides for dynamic server allocation and provisioning. 0101, most parts of a server’s system image are read-only and identical from one server to the next. Accordingly, disclosing identifying at least one master storage image (0046, master server

image) that is stored in the storage of the storage area network (0058, repository manager can also install and manage instances of a SAN) and that will be associated with a system user (0046, administrator), each master storage image including both a read-only data portion and a writable data portion (0101, most parts of a server's system image are read only and identical from one server to the next).]

“generating a read-only copy of the read-only data portion of each master storage image;” [0095, an independent instance contains an actual physical copy of all files in the master image, with the configuration files updated to provide a unique personality. The independent instance is stored on centralized storage and can be run by any available server. 0101, most parts of a server's system image are read-only and identical from one server to the next. Accordingly, disclosing generating a read-only copy of the read-only data portion of each master storage image (independent instance).]

“sharing the read-only data copy of the read-only data portion of each master storage image across the plurality of servers;” [0097, the remainder of the image is shared with other dependent instances by referencing the read-only snapshot containing the original files. 0101, most parts of a server's system image are read-only and identical from one server to the next. In DSAP systems, servers can share a single copy of the read-only portions of images stored on NAS or SAN. Accordingly, disclosing sharing the read-only data copy of the read-only data portion of each master storage image across the plurality of servers (dependent instances)]

“allocating the read-only copy of the read-only data portion of a selected master storage image to each server allocated to the system user; and” [0097, the remainder of the image is shared with other dependent instances by referencing the read-only snapshot containing the

original files. 0101, most parts of a server's system image are read-only and identical from one server to the next. In DSAP systems, servers can share a single copy of the read-only portions of images stored on NAS or SAN. 0033, the terms user, entity, administrator, and the plural form of these terms may be used interchangeably throughout herein refer to those who would access, use, and/or benefit from the tool that the present invention provides for dynamic server allocation and provisioning. Accordingly, disclosing allocating a the read-only copy of the read-only data portion of a selected master storage image to each server (0097, dependent instances) allocated to the system user (0033, user)]

However, Watts does not explicitly disclose, "allocating a separate writable data volume of the writable data portion of the selected master storage image to each server allocated to the system user" and "writeable data portion"

On the other hand, Edelstein discloses "allocating a separate writable data volume (written to the server as file 210) of the writeable data portion of the selected master storage image (file is locked so that user A has read/write privileges) to each server (server) allocated to the system user (user)" and "writeable data portion" (written to the server)

Watts discloses that a control console having a graphical user interface is also provided for allowing a user to create various server images and perform various other administrative, reporting and billing functions, including defining the pre-determined criteria for the load manager to implement during server provisioning and allocation, 0014. In other words, Watt

does not explicitly allow for a multiple users to manipulate server images. Edelstein discloses that both a user A and user B are able to edit a file. It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have applied Edelstein's disclosure above to the system of Watt for the purpose of allowing more than one user to manipulate server files. Thus, allowing for more productive activities to occur concurrently.

Claim 20:

Watts discloses the following claimed limitations:

“a plurality of servers coupled to a storage; and” [0046, repository manager is responsible for securely and efficiently provisioning and managing server images on storage devices within data centers. And figure 2 elements 212, 218, and 210. Accordingly, disclosing a plurality of servers coupled to a storage.]

“a storage provisioning device coupled to the servers and allocating at least one server and a portion of the storage to a system user, the storage provisioning device identifying at least one master storage image that is stored in the storage of the storage area network and that will be associated with a system user, each master storage image including both a read-only data portion and a writeable data portion,” [0094, provisioning n instances 306 of a server class 304 provides DSAP (dynamic server allocation and provisioning) system 102 with the capacity to run n servers of the specified class 304. 0046, the administrator and pick and choose from the installed software base to create a master server image. and 0058, in an alternate embodiment, repository manager can also install and manage instances of a SAN as well as on a server's local attached storage. 0033, the terms user, entity, administrator, and the plural form of these terms may be

used interchangeably throughout herein refer to those who would access, use, and/or benefit from the tool that the present invention provides for dynamic server allocation and provisioning. 0101, most parts of a server's system image are read only and identical from one server to the next. Accordingly, disclosing a storage provisioning device coupled to the servers and allocating at least one server and a portion of the storage to a system user (0094, DSAP), the storage provisioning device identifying at least one master storage image (0046, master server image) that is stored in the storage of the storage area network (0058, SAN) and that will be associated with a system user (0033, user), each master storage image including both a read-only data portion and a data portion (0101, most parts of a server's system image are read only and identical from one server to the next).]

"the storage provisioning device further generating a read-only copy of the read-only portion of each master storage image" [0095, an independent instance contains an actual physical copy of all files in the master image, with the configuration files updated to provide a unique personally. The independent instance is stored on centralized storage and can be run by any available server. 0101, most parts of a server's system image are read-only and identical from one server to the next. Accordingly, disclosing the storage provisioning device further generating a read-only copy of the read-only portion of each master storage image (0095, independent instances)]

"and sharing the read-only copy of the read-only portion of each master storage image across the plurality of servers," [0097, the remainder of the image is shared with other dependent instances by referencing the read-only snapshot containing the original files. 0101, most parts of a server's system image are read-only and identical from one server to the next. In DSAP

systems, servers can share a single copy of the read-only portions of images stored on NAS or SAN. Accordingly, disclosing sharing the read-only copy portion (dependent instances)]

“allocating the read-only copy of the read-only portion of a selected master storage image to each server allocated to the system user,” [0097, the remainder of the image is shared with other dependent instances by referencing the read-only snapshot containing the original files. 0101, most parts of a server’s system image are read-only and identical from one server to the next. In DSAP systems, servers can share a single copy of the read-only portions of images stored on NAS or SAN. 0033, the terms user, entity, administrator, and the plural form of these terms may be used interchangeably throughout herein refer to those who would access, use, and/or benefit from the tool that the present invention provides for dynamic server allocation and provisioning. Accordingly, disclosing allocating a the read-only copy of the read-only data portion of a selected master storage image to each server (0097, dependent instances) allocated to the system user (0033, user)]

However, Watts does not explicitly disclose, “allocating a separate writable data volume of the writable data portion of the selected master storage image to each server allocated to the system user” and “writable data portion”

On the other hand, Edelstein discloses “allocating a separate writable data volume (written to the server as file 210) of the writeable data portion of the selected master storage image (file is locked so that user A has read/write privileges) to each server (server) allocated to the system user (user)” and “writeable data portion” (written to the server).

Watts discloses that a control console having a graphical user interface is also provided for allowing a user to create various server images and perform various other administrative, reporting and billing functions, including defining the pre-determined criteria for the load manager to implement during server provisioning and allocation, 0014. In other words, Watt does not explicitly allow for a multiple users to manipulate server images. Edelstein discloses that both a user A and user B are able to edit a file. It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have applied Edelstein's disclosure above to the system of Watt for the purpose of allowing more than one user to manipulate server files. Thus, allowing for more productive activities to occur concurrently.

9. Claims 10-11 and 20-22 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 20030126202 by Watt (hereafter Watt) further in view of U.S. Patent Application Publication 20040172395 by Edelstein et. al. (hereafter Edelstein) and U.S. Patent 6816905 by Sheets et. al. (hereafter Sheets).

Claim 10:

Watt and Edelstein do not explicitly disclose “de-allocating the read-only copy of the read-only data portion of the selected master image from the server to which the read-only copy was allocated when the server is de-allocated from the system user; and de-allocating the writable data volume of the writable data portion of the selected master storage image that was allocated to the de-allocated server” alone.

However, Sheets discloses de-allocating the read-only copy of the read-only data portion of the selected master image from the server to which the read-only copy was allocated when the server is de-allocated from the system user; and de-allocating the writable data volume of the writable data portion of the selected master storage image that was allocated to the de-allocated server. (See column 18, lines 32-45 discloses another way of looking at how the present invention can dynamically provide hosted service across disparate accounts is to view a portion of the servers as being assigned to a pool of a plurality of virtual servers that may be selectively configured to access software and data for a particular administrative group...it automatically allocates one of the servers from the pool of virtual servers to that administrative group. Conversely, if the dispatch module determines that an agency group can relinquish one of its servers, that relinquished server would be added to the pool of virtual servers that are available for re allocation to a different administrative group.)

It would have been obvious to one with ordinary skill in the art to combine the method as disclosed in Watt and Edelstein with the de-allocating method as disclosed in Sheets because they disclose methods that operate very similarly, but the de-allocation was simply not addressed in Watt and Edelstein, but is a natural extension of Watt and Edelstein. By moving the de-allocated copy into the pool, the server is now marked available for future use when it is needed. It is for this reason that one of ordinary skill in the art would have been motivated to include de-allocating the read-only copy of the read-only data portion of the selected master image from the server to which the read-only copy was allocated when the server is de-allocated from the system user; and de-allocating the writable data volume of the writable data portion of the selected master storage image that was allocated to the de-allocated server.

Claim 11:

Watt and Edelstein do not explicitly disclose “de-allocating the writable data volume includes the steps of: assigning the de-allocated writable data volume to a pool of de-allocated writable data volumes; and scrubbing any writable data volumes assigned to the pool of de-allocated writable data volumes asynchronously from the step of de-allocating the writable data volume.”

However, Sheets suggests “de-allocating the writable data volume includes the steps of: assigning the de-allocated writable data volume to a pool of de-allocated writable data volumes; and scrubbing any writable data volumes assigned to the pool of de-allocated writable data volumes asynchronously from the step of de-allocating the writable data volume” [column 18, lines 41-45 discloses conversely, if the dispatch module determines that an agency group can relinquish one of its servers, that relinquished server would be added to the pool of virtual servers that are available for re allocation to a different administrative group. Further disclosing column 15, lines 8-14 one of the significant advantages of the present invention is that the process of reconfiguring servers from one administrative group to a second administrative group will wipe clean all of the state associated with a particular customer account for the first administrative group from the reallocated server before that server is brought into service as part of the second administrative group.]

It would have been obvious to one with ordinary skill in the art to combine the teachings of Watt and Edelstein with the disclosure in Sheets by adding the scrubbing method to enhance the security of sharing the data volumes between different users. It is for this reason that one of

ordinary skill in the art would have been motivated to have the step of de-allocating the writable data volume include the steps of: assigning the de-allocated writable data volume to a pool of de-allocated writable data volumes; and scrubbing any writable data volumes assigned to the pool of de-allocated writable data volumes asynchronously from the step of de-allocating the writable data volume.

Claim 21-22:

Regarding claim 21 and 22, Watt and MSDN in view of Sheets disclose the storage area network as cited above for claims 10 and 11 respectively.

Response to Arguments

10. Applicant's arguments, see page 10 line 27 to page 11 line 2, with respect to the rejection(s) of claim(s) 1 and 12 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Scheer.

Conclusion

11. The prior art made of record listed on PTO-892 and not relied, if any, upon is considered pertinent to applicant's disclosure.

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D. Pham whose telephone number is (571)272-3924. The examiner can normally be reached on Monday - Friday 9am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/M. P./
Examiner, Art Unit 2167

/John R. Cottingham/
Supervisory Patent Examiner, Art Unit
2167

